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AMENDMENTS TO THE DRAWINGS:

Figures 15 and 16 are amended herewith to correct minor spelling errors. The Examiner respectfully is requested to accept and approve the corrected drawings.

Attachments:

Replacement Sheets (2)

Annotated Sheets Showing Changes (2)

REMARKS

Claims 1, 3, 8, and 15-26 are all the claims presently pending in the application.

Applicants gratefully acknowledge that **claims 15 and 16** would be **allowable** if rewritten in independent form. Applicants respectfully submit, however, that all of the claims (i.e., claims 1, 3, 8, and 15-26) are allowable for the reasons set forth below. Applicant respectfully reserves the right to rewrite allowable claims 15 and 16 in independent form at a later time.

Claims 1, 8, 15, and 16 have been amended merely to make editorial amendments in conformance with U.S. Patent practice.

New Claims 17-26 have been added to provide more varied protection for the present invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1, 2, and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yokoyama (EP 0981215 A2).

This rejection is respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention is directed to an optical amplifying and relaying system.

In an illustrative, non-limiting embodiment as defined by independent claim 1, an optical amplifying and relaying system includes up and down optical transmission lines opposing each other, an amplifier provided on each of the optical transmission lines, and monitoring light signal folding-back lines connected between the optical transmission lines and each including an optical coupler for taking out a monitoring light signal led to the one optical transmission line, and wavelength selective reflecting means for

transmitting the monitoring light signal received from the one optical transmission line by folding-back transmission to the opposite optical transmission line. The optical amplifying and relaying system further includes variable optical attenuators each provided between each optical coupler and the associated wavelength selective reflecting means.

In conventional optical amplifier/relay systems, the light intensity variation in the optical amplifier in each line and the light intensity variation of the monitoring light signal transmitted to the opposite line are equal. As such, when a problem occurs in the optical amplifier (the output of which is subject to very little variation), the problem cannot be recognized or the recognition takes a long time (e.g., see specification at page 3, lines 5-15). Moreover, in conventional optical amplifier/relay systems, the monitoring light signal folded back to the opposite line permits obtaining only data concerning the output level of the optical amplifier (e.g., see specification at page 3, lines 5-15).

The claimed invention, on the other hand, provides a high accuracy optical amplifying and relaying system capable of solving or alleviating the aforementioned problems associated with the conventional optical amplifier/relay systems (e.g., see specification at page 3, lines 17-20).

Particularly, the claimed invention provides variable optical attenuators in the monitoring light signal folding circuits installed in the individual optical amplifiers for easily and highly accurately determining the levels of the monitoring light signals folded back to the opposite lines in dependence on the state of the optical amplifying and relaying system to be monitored. In the claimed invention, it is further possible to monitor a plurality of data of the optical amplifying and relaying systems (e.g., see specification at page 21, line 17, to page 22, line 6).

II. THE PRIOR ART REJECTION

Claims 1, 2, and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yokoyama (EP 0981215 A2). For at least the following reasons, Applicants respectfully traverse this rejection.

The Examiner alleges that “*Yokoyama teaches a bi-directional optical amplifier*

comprising: an up and a down transmission lines opposing each other (figure 5); amplifiers (2a and 2b) provided on each of the transmission lines; monitoring light folding back lines (figure 50 connected between the two transmission lines, the folding-back lines including wavelength selective reflecting means (6) for transmitting monitoring light, variable optical attenuators (4) and optical couplers (3c and 3d) located on the input side of each amplifier” (see Office Action at page 2, lines 15-22; emphasis added).

However, Applicants respectfully submit that Yokoyama does not disclose or suggest “variable optical attenuators”, as alleged by the Examiner.

Instead, Yokoyama merely discloses optical attenuators 4a, 4b, 4c, 4d (i.e., fixed optical attenuators) as shown in Figure 5 of Yokoyama (e.g., see also Yokoyama at column 6, lines 34-45, column 7, lines 20-23, column 7, lines 42-43).

Independent Claim 1

In comparison, independent claim 1 recites, *inter alia*, that “*the optical amplifying and relaying system further comprises variable optical attenuators each provided between each optical coupler and the associated wavelength selective reflecting means*” (emphasis added).

Thus, the claimed invention provides an optical amplifying and relaying system that can easily and highly accurately determine the levels of the monitoring light signals folded back to the opposite lines in dependence on the state of the optical amplifying and relaying system to be monitored, and further, that can monitor a plurality of data of the optical amplifying and relaying system (e.g., see specification at page 21, line 17, to page 22, line 6).

As mentioned above, Yokoyama does not disclose or suggest the claimed “variable optical attenuators”.

For the foregoing reasons, Applicants respectfully submit that Yokoyama does not disclose or suggest the novel and unobvious combination of elements recited in independent claim 1.

Claim 3

Claim 3 recites, *inter alia*, that “*the optical couplers are each provided on the optical transmission line on the input side of each optical amplifier*”.

With respect to dependent claim 3, the Examiner has not identified any teaching for the claimed features of claim 3, which are allegedly shown by Yokoyama. Instead, the Examiner merely states that claim 3 “reads on” the structure of Figure 5 of Yokoyama.

Applicants respectfully submit, however, that Figure 5 of Yokoyama clearly does not disclose or suggest that “*the optical couplers are each provided on the optical transmission line on the input side of each optical amplifier*”, as recited in claim 3. Instead, Figure 5 of Yokoyama clearly shows the optical couplers being disposed on the output side of the optical amplifiers.

Thus, Applicant submits that Yokoyama does not disclose or suggest all of the features of claim 3. Additionally or alternatively, Applicant respectfully submits that the Examiner has not established a *prima facie* case that claim 3 is anticipated by Yokoyama.

Independent Claim 8

With respect to independent claim 8, the Examiner states that claim 8 also “reads on” the structure of Figure 5 of Yokoyama.

Claim 8 recites, *inter alia*, an optical amplifying and relaying system, including:

an up and a down optical transmission line opposing each other;

amplifiers each provided on each of the optical transmission lines; and

monitoring light signal folding-back lines connected between the two optical transmission lines and each including an optical coupler for taking out a monitoring light signal led to one optical transmission line and wavelength selective reflecting means for transmitting the monitoring light signal received from the one optical transmission line by folding-back transmission to the opposite optical transmission line,

wherein variable optical attenuators are each provided between each optical coupler and the associated wavelength selective reflecting means, and the monitoring light signal folding-back lines are each provided on the input side of the

optical amplifier on the one optical transmission line (emphasis added).

As mentioned above, Yokoyama does not disclose or suggest the claimed “variable optical attenuators”.

For the foregoing reasons, Applicants respectfully submit that Yokoyama does not disclose or suggest the novel and unobvious combination of elements recited in independent claim 8.

For the foregoing reasons, Applicants respectfully submit that Yokoyama does not disclose or suggest the novel and unobvious combination of elements recited in claims 1, 3, and 8. Therefore, Applicants respectfully request that the Examiner withdraw this rejection and permit claims 1, 3, and 8 to pass to immediate allowance.

III. NEW CLAIMS

New claims 17-26 are added to provide more varied protection. Applicants respectfully submit that these claims are allowable at least of the reasons set forth above with respect to claims 1, 3, and 8.

IV. FORMAL MATTERS AND CONCLUSION

Applicants request that the Examiner acknowledge receipt of and approve the Formal Drawings filed on February 18, 2004.

As mentioned above, Figures 15 and 16 are amended herewith to correct minor spelling errors. The Examiner respectfully is requested to accept and approve the annotated drawings and the corrected replacement drawings.

In view of the foregoing, Applicants submit that claims 1, 3, 8, and 15-26, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone

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(FUK.022DIV1)


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number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: July 21, 2005



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FIG. 15

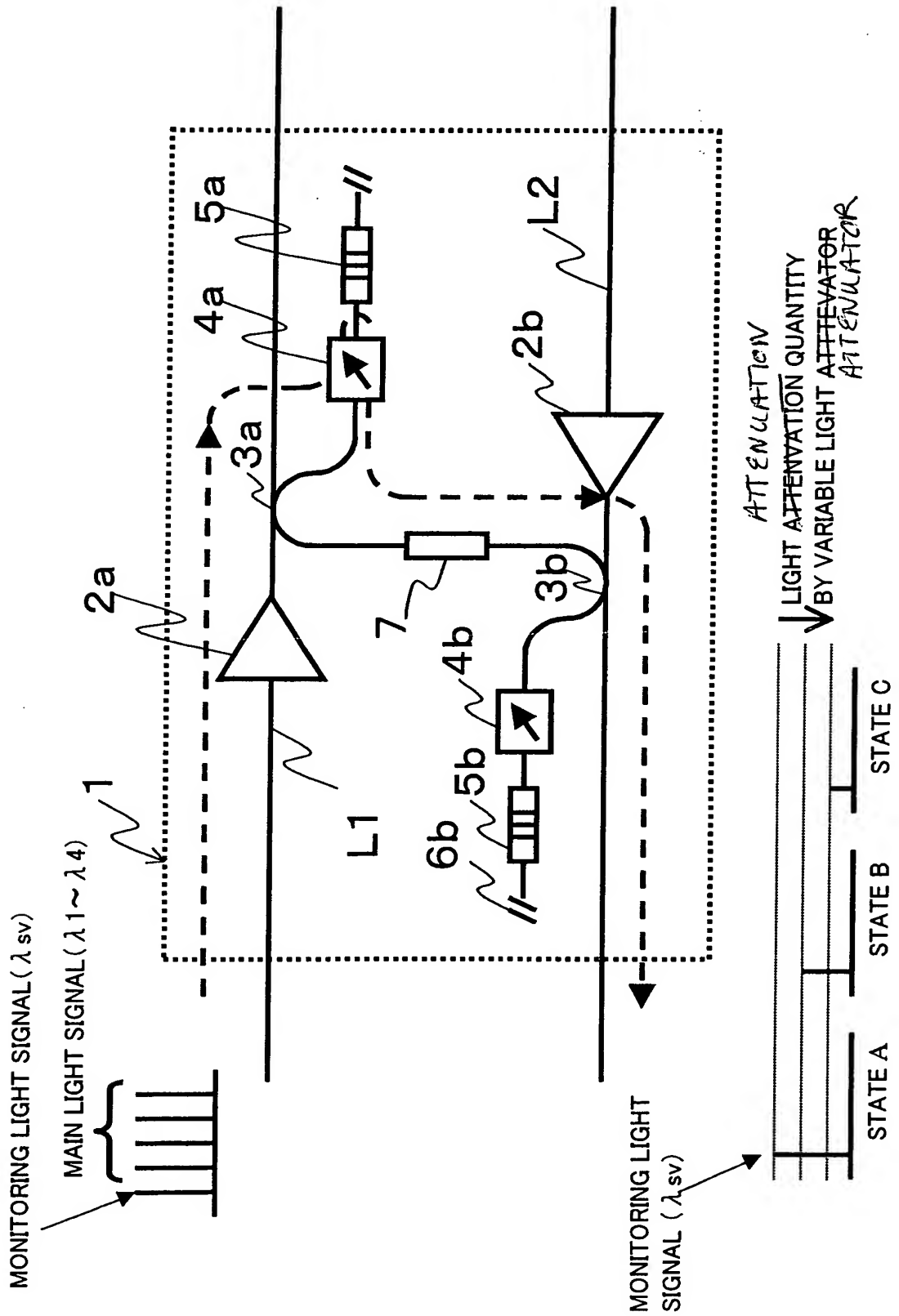




FIG. 16

